(d) Out of total 4472 km. length of National Highways in Andhra Pradesh, 2349 km. length is four laned/under progress/proposed for four laning under NHDP. Also 114 km. is four laned/under progress/ proposed for four laning by this Ministry through State PWD.

Launch of INSAT-4C

993. SHRI B.J. PANDA:
MS. PRAMILA BOHIDAR:

Will the PRIME MINISTER be pleased to state:

(a) whether it is proposed to launch communication satellite INSAT-4C by Geo-synchronous Satellite Launch Vehicle;

(b) if so, the details of this latest communication satellite; and

(c) the details of benefits that would accrue to the people in general and those residing in far-flung inaccessible regions in particular, especially in Orissa State?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) and (b) INSAT-4C launch was attempted by Geo-synchronous Satellite Launch Vehicle (GSLV)-F02 on 10th July, 2006, and did not succeed. A replacement of INSAT-4C, namely INSAT 4-CR will be launched in 2007-08 by GSLV-F04. INSAT-4CR carries 12 high-power Ku-band transponders primarily to meet the Direct-to-Home (DTH) television services.

(c) This satellite will be used by DTH and VSAT operators which will give television signals and communication facilities to all parts of the country including inaccessible regions of Orissa State.

Recovering the Debris of GSLV-F02

994. SHRIMATI SYEDA ANWARA TAIMUR:
SHRI VIJAY J. DARDA:

Will the PRIME MINISTER be pleased to state:

(a) whether Government have recovered the debris of the Geo-synchronous Satellite Launch Vehicle-F02 carrying INSAT-4C plunged into the Bay of Bengal minutes after it blasted off from the Satish Dhawan Space Centre in Sriharikota;

(b) if so, whether Government have arrived at any conclusion about the crash and failure of launch; and

(c) what corrective measures Government have taken to ensure next flight a successful one?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) Yes, Sir. The debris of the GSLV-F02 vehicle fell into the sea at around 6-8 km from the launch site. Efforts were made to locate and recover the rocket hardware in the sea-bed (30-40 meters deep) using ships from the Department of Ocean Development. While a few of the hardware components of the healthy engines S1, S2 and S3 were located and recovered, the hardware of the malfunctioned engine S4 could not be located.

(b) The Failure Analysis Committee has concluded that the primary cause of mission failure is due to loss of thrust in one of the liquid strap-on motors. The anomalous behaviour was due to malfunctioning of propellant regulator of the gas generator system in one of the liquid strap-on motors. This resulted in higher propellant mass flow rate than desired leading to the engine shut-off just after vehicle lift-off. The malfunctioning of the propellant regulator is attributed to the larger flow area due to manufacturing error.

(c) Based on the recommendations made by the Failure Anaysis Committee, actions have already been undertaken to further strengthen the quality control and quality assurance procedures both within ISRO and external work centres, independent inspection and quality checks by in-house agencies for all critical components and sub-assemblies on receipt from work centres, review of acceptance procedures and standards. Additional tests have also been introduced for the critical engine components.

Putting of an Indian in space by 2014

995. SHRI VIJAY J. DARDA: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that some detailed plans have been drawn up to put an Indian in space by 2014 and another on the moon by 2020;